



NONWOVEN  
**TOP CONVERTING  
TECHNOLOGY FOR  
FEMININE CARE**

FOR YEARS TO COME

**ANDRITZ**

ENGINEERED SUCCESS





### TECHNOLOGY SOLUTION PROVIDER

As the market becomes more and more demanding, ANDRITZ Diatec offers the latest technology solutions with a wide range of customization options to help customers find the right machine configuration to save time and money.



### FULL MACHINE PORTFOLIO RANGE

ANDRITZ Diatec is able to supply turnkey converting machines for the production of a comprehensive range of sanitary products:

- Baby diapers
- Baby pants
- Adult diapers
- Adult pants
- Underpads
- Light Inco products
- Shaped pads
- Sanitary napkins
- Panty shields
- Food pads
- Lamination



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# A reliable partner



**ANDRITZ Diatec** designs and manufactures a wide range of machines and technology solutions for the production of baby diapers, baby pants, adult incontinence products, sanitary napkins, panty shields and underpads. Its line portfolio ranges from aXcess lines with low capacities, eXcelle lines with medium capacities to eXcelle pro lines with high capacities.

Always at the forefront of innovation, ANDRITZ Diatec has broadened its production horizons by delivering new lines for food pads, lamination, medical products, disposable gloves, headrests, surgical drapes and spool winding equipment.

## KEY TO SUCCESS

The key factor in our success is the relationship that we create and maintain with our customers from the design of the machine to the “nurturing” phase during machine installation intended to offer specialized support for a smooth start-up in the customer’s plant.

## DISTINCTIVE TRAIT

Important added-value from ANDRITZ Diatec is the capability to respond quickly and promptly to the changing needs of the present-day market, allowing customers to seize opportunities and translate them into concrete projects. We also provide full project management, from planning control to start-up of the line in order to secure a prompt return of investment.

## YOUR BENEFITS

- Customer care
- Customer satisfaction
- Spare parts
- After-sales assistance
- ANDRITZ guarantee

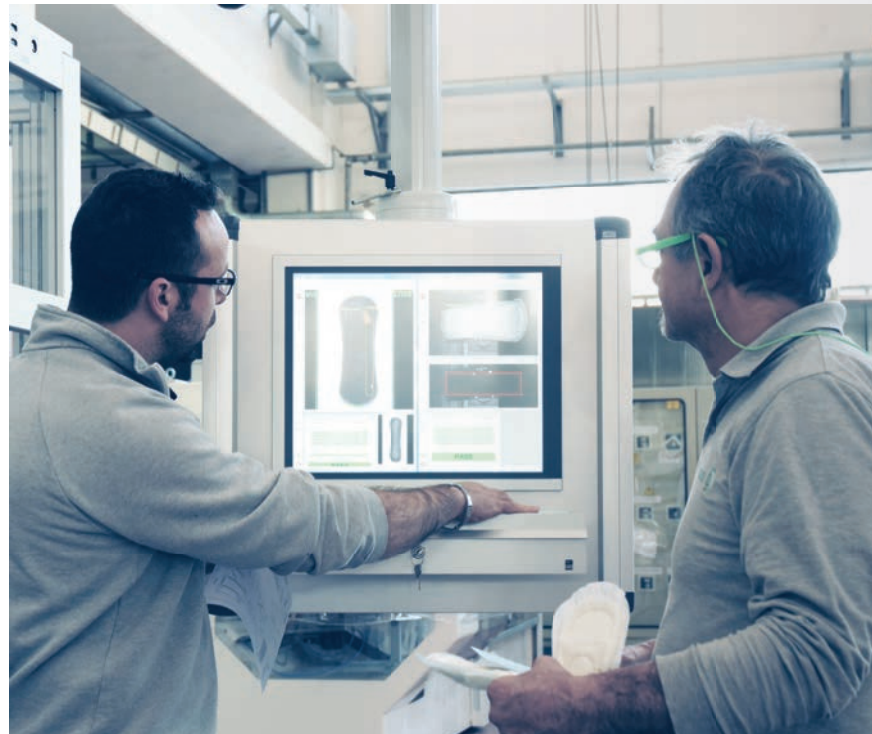


# Build your future in hygiene converting

In order to cover all of your final product and production requirements, our machine portfolio ranges from market entry to high capacities, precisely designed to meet your needs. The machines are built with a modular frame that allows customized configuration. Moreover, the compact layout ensures a smooth start-up and easy machine maintenance. Machines and retrofits can be installed easily according to customers' requirements. The full servo-technology simplifies ordinary operations and adaptation of the raw materials to the environmental conditions.

## BENEFIT FROM A TRUSTWORTHY PARTNER

ANDRITZ Diatec machines are characterized by the use of high-precision mechanical tooling and high levels of automation. The bulky structure of the core formation provides stability and ensures minimized vibrations, thus making the production environment more pleasant. The production process is easy to monitor and adjust during operations. Our machines achieve high efficiency in terms of OEE and low waste rates. The use of top-notch components ensures long-term reliability of the machines and consistent savings in terms of spare parts and technical intervention.



## CONSTRUCTION PHILOSOPHY

All our machines are designed, manufactured and tested entirely in Italy, using EU or US components, in compliance with CE regulations. Depending on customers' needs, ANDRITZ Diatec offers customized solutions according to production volumes, product recipes and all requirements relating to the customer's production plant. We

also ensure that we respect the project timing in order to meet customer's requirements. We are able to offer a full-range of extensions and retrofitting kits to keep our customers' machines state-of-the-art.

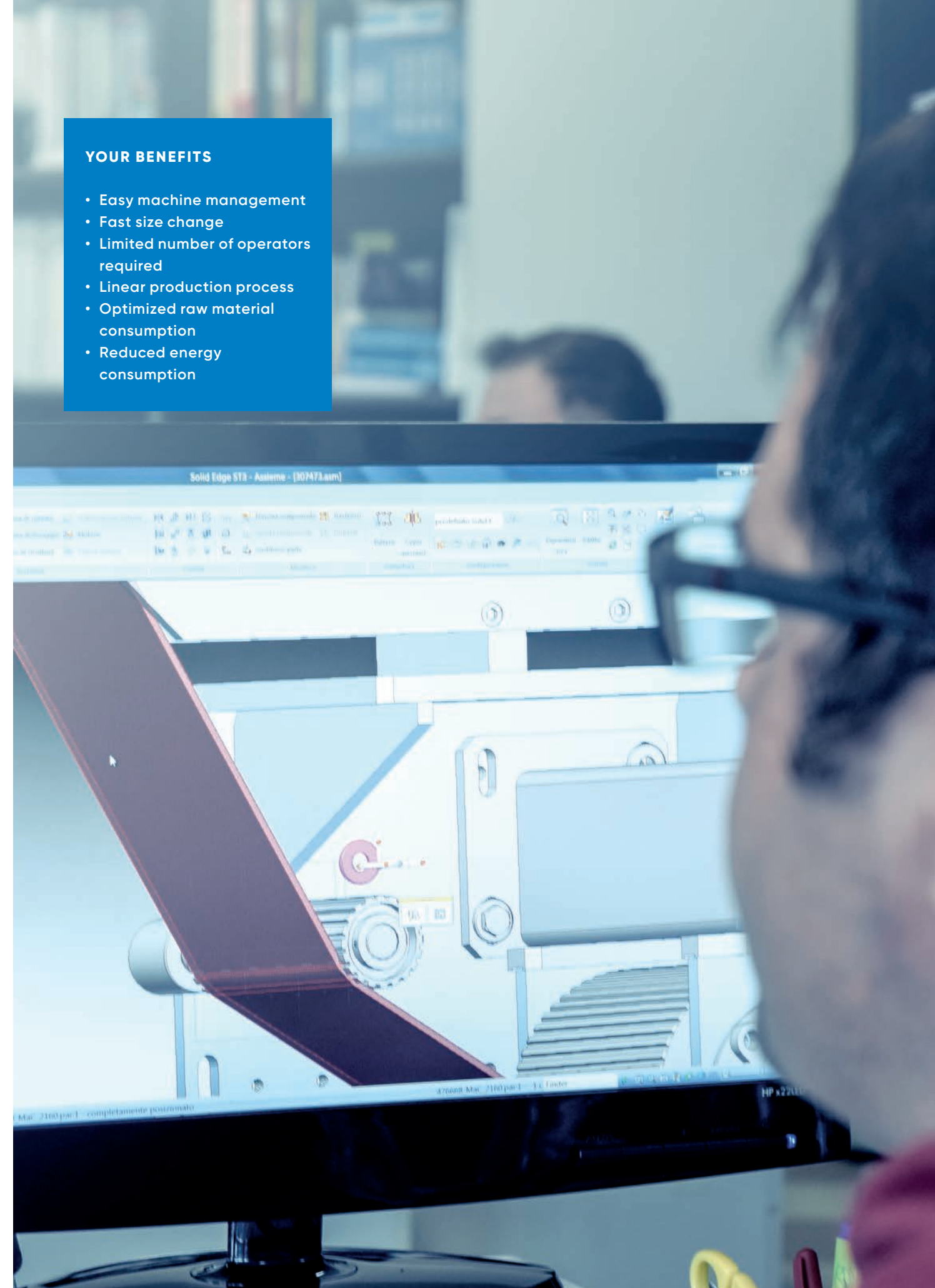
## MACHINE MANAGEMENT

Our machines are easy to manage. All machine parameters can be

easily set, stored in the memory, recalled and changed according to the needs of the customer. All operations are carried out with the highest efficiency and security levels in order to simplify daily operations on the machine. A fast and easy size change configuration reduces machine downtime and hence increases production output.

## YOUR BENEFITS

- Easy machine management
- Fast size change
- Limited number of operators required
- Linear production process
- Optimized raw material consumption
- Reduced energy consumption





# Dedicated service

## We know how important uptime is for your production efficiency:

We do everything to keep interruptions to a minimum. With remote assistance and a highly responsive service team, we can react to your issues in the shortest time possible.

### FAST MACHINE START-UP

Our machines are thoroughly checked before shipment so as to speed up the start-up in the customer's plant and reduce machine downtime.

### SPARE PARTS

We guarantee the supply of original spare parts with onsite installation, in accordance with the customer's timing and efficiency demands.

### MAINTENANCE

Machine maintenance is made easier by the compact machine

layout, which leaves wide spaces for movement around the machine. Every process is linear and complies with the highest safety levels. Cost and time savings, efficiency and durability are guaranteed by the high quality of engineering and components used.

### REMOTE ASSISTANCE

ANDRITZ Diatec is there for you at all times. Remote assistance is critical to guarantee that machine performance is kept high. Our engineers are always at your disposal by helping you identify problems and find remedies

promptly. In this way, operators' maintenance skills are improved and after-sales costs for interventions and machine stoppages are reduced.

### AFTER-SALES SERVICE

ANDRITZ Diatec shares trust and growth with customers. This value is mirrored in the wide range of services that we offer.



### YOUR BENEFITS

- Spare parts installation
- Safety inspections
- Preventive inspections for routine maintenance
- Production supervision
- Technical documentation



### UPGRADES AND RETROFITS

Our machines have a long lifecycle. The modular and compact frame makes refurbishment operations easier. Throughput can be optimized significantly by means of tailored upgrades, which also enable the final product structure to be updated in line with market demands.

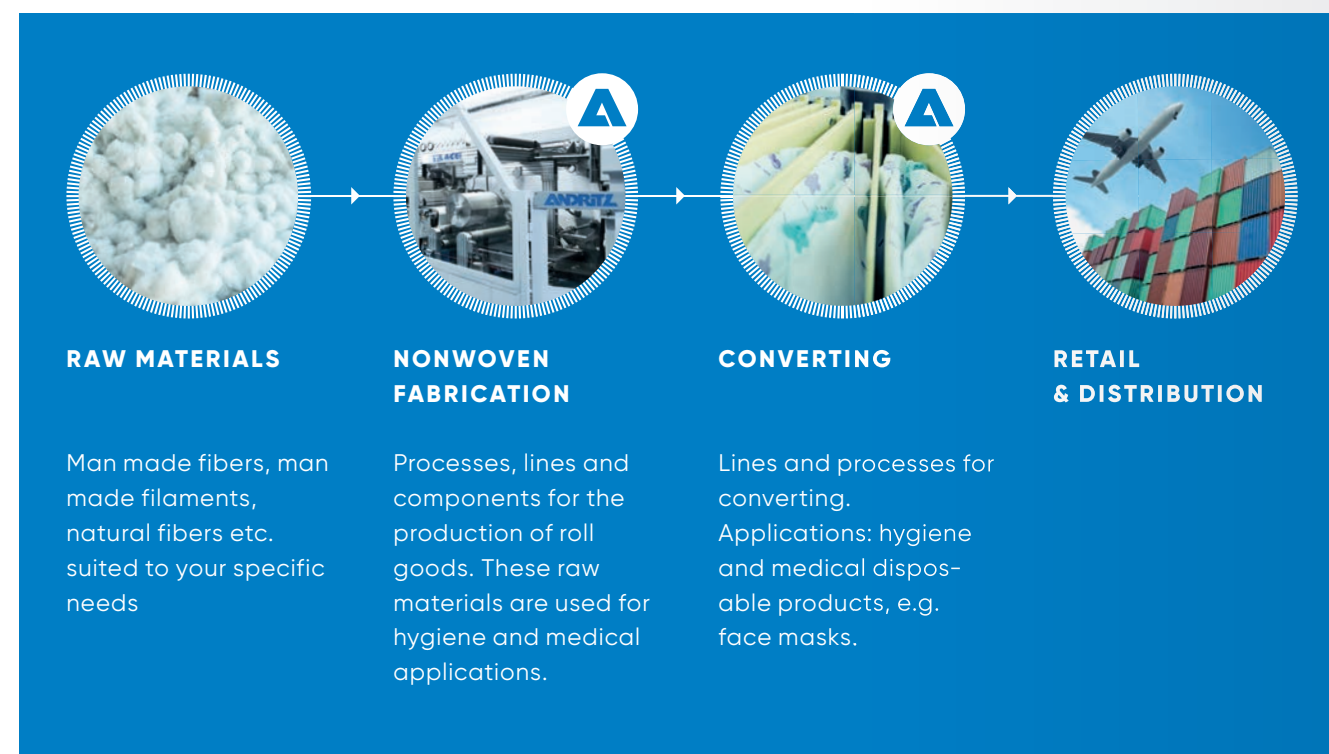
### SERVICE SUPPORT

- Control equipment and software upgrades
- Analysis of existing machines to upgrade and optimize production
- Training programs for machine operators



# Full range in nonwovens production

**Let our experience drive your innovation:** A remarkable impact on nonwovens technologies: Whether hygiene or medical, automotive or building, household or technical – nonwovens applications are manifold. Their outstanding properties require excellent engineering in an increasingly changing and growing market. You can rely on a competent partner: with a passion for nonwovens technologies and with spot-on solutions perfectly suited to your specific needs.



## NONWOVENS UNLIMITED

ANDRITZ is a machinery supplier to offer nonwoven processes for roll goods production and also converting lines. In this way, ANDRITZ covers a great part of nonwovens value chain. Its expertise in the treatment of raw materials and market know-how of

possible end uses bring unique added-value for the nonwovens industry. Hygiene is a part of the DNA at ANDRITZ and thanks to the spunbond, spunjet, air-through bonding and spunlace pilot lines, all materials used in the converting lines can be tested and approved by the market in advance.

# Develop your hygiene products with our experts

**Continuous research and development targeting your needs:** In an ever more demanding market, get the most out of your investment with the support of our test equipment and highly skilled engineers. You can benefit from more than three decades of experience and expertise.

## RESEARCH AND DEVELOPMENT

Being dedicated to high quality and innovative production technologies propels us to seek ideal solutions. Let our combined forces achieve maximum results.

Highly skilled staff provide unique know-how drawn from our installed base and continuous R&D.

## SPUNLACE TECHNICAL CENTER

Our spunlace pilot line in Montbonnot, France, includes state-of-the-art equipment to produce a wide range of spunlace fabrics. During the trials, the pilot line is able to operate at up to 500 m/min. Tests can be conducted in-line with the TT card or off-line with an unwinder. It is also equipped with a complete water filtration system so that trials can be conducted with all types of fibers. You can test natural or synthetic fibers, short or long fibers, paper fibers, and so on.

## SPUNLAID TECHNICAL CENTER

Our spunlaid technical center in Krefeld, Germany, includes a wide range of pilot calenders for different applications and needs, more than 200 engraved rolls and shells, various sleeves, measurement systems and a 3D-microscope. It is well-equipped to handle many

fields of application like embossing for wipes, calibration for melt-blown material, laminating of roofing material or filters, thermo-bonding, perforating of top-sheets, compacting of wetlaid fabrics, comparisons between thermal and ultrasonic laminating, or textile finishing.

## WETLAID TECHNICAL CENTER

Our wetlaid pilot line in Krefeld, Germany includes state-of-the-art equipment to produce a wide range of wetlaid fabrics for the automotive, aerospace, agriculture, construction, medical, wipes and hygiene industries, as well as the household goods sector. Arrangement of the components on a rail system ensure highest flexibility when extensions or modifications are needed.

## AIR-THROUGH-BONDING TECHNICAL CENTER

CETI, the European Center for Innovative Textiles, is a research center for new textile applications and is located in Lille, France. ANDRITZ has been supplying the institute with the latest nonwoven technologies, including air-through bonding. The air-through bonding pilot line provides CETI and its customers with a R&D platform

for both flat and Omega ovens for prototyping the fast growing trends in hygiene applications.

## YOUR BENEFITS

- Process expert support
- Equipment containing the latest technology
- Integrated laboratory to test nonwoven fabrics
- Simulation tool



# Innovative solutions for hygiene products

**ANDRITZ offers you customized solutions:** For the production of hygiene products, we can deliver tailor-made processes. Take advantage of the vast expertise that ANDRITZ has to offer in a wide range of hygiene nonwovens technologies, such as web forming and finishing (air-through bonding, spunlace, spunlaid, spunjet, wetlace) and converting (baby diapers, feminine hygiene, adult incontinence).

## COMPLETE AIR-THROUGH BONDING (ATB) LINES

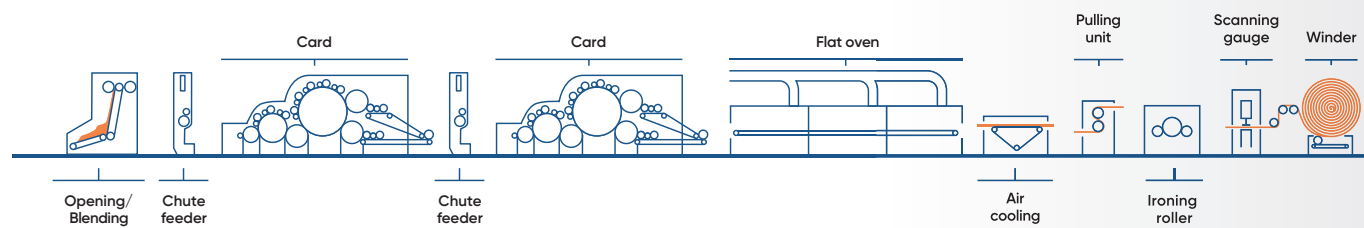
The ANDRITZ air-through bonding lines deliver all nonwovens fabric characteristics for hygiene end uses, such as top-sheets and acquisition distribution layers, and back sheets. The well-known ANDRITZ carding machines are the key to success in achieving perfect web uniformity and comfort. With the ANDRITZ air-through bonding line, you can benefit from high production capacity and high-performance fabrics from 16 to 80 gsm made from bi-component fibers produced at high speeds of up to 250 m/min.

## COMPLETE SPUNLACE LINES

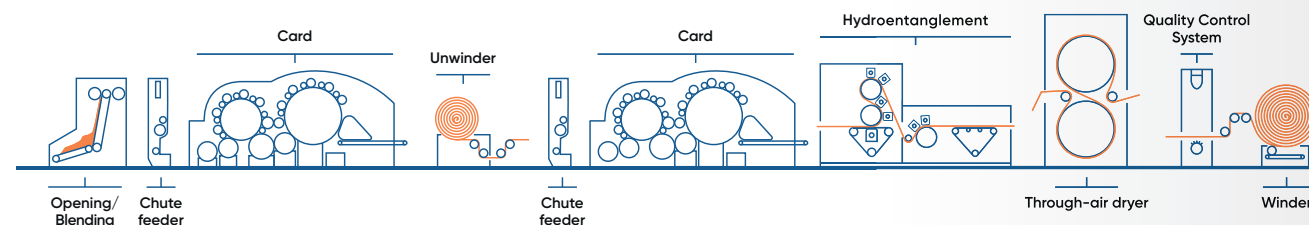
ANDRITZ is an active player in most of the world's spunlace production. In order to meet the market demands, ANDRITZ offers you a wide range of complete spunlace lines combining performance, efficiency and profitability. The premium line layout combines very high capacity of up to 25,000 t/a with low energy consumption and is able to produce all types of spunlace roll goods. Spunlace fabrics are made from all types of raw materials – natural or synthetic. Softness, drape, comfort, comfortability, high strength, and the fact that they contain no chemicals are the major characteristics that make spunlace nonwovens unique.

## YOUR BENEFITS

- ANDRITZ expertise in hygiene market
- Perfect web uniformity
- Versatility of fibers
- Technical centers: spunlace in Montbonnot, France; spunbond/calendering/wetlaid in Krefeld, Germany and air-through bonding at CETI, France
- Expertise in testing and converting



ANDRITZ air-through bonding line for hygiene end-uses, 16-80 gsm



ANDRITZ spunlace line for medical and wipes end-uses, 30-100 gsm

## COMPLETE SPUNBOND FINISHING LINES

ANDRITZ spunbond solutions: You benefit from the highest capability, reproducibility, reliability, and efficiency. Find the best solution, perfectly suited to your needs, for thermobonding and finishing processes like embossing, compacting, lamination, or perforation. Besides calendering technologies, you'll find solutions for your complete finishing process with neXline finish. This encompasses calender, spunjet technology, finishing solutions, and dryer – turnkey solutions from just one source.

## PRECISELY WHAT YOU NEED

If you need a complete system solution, a single unit, a rebuild, an automation system, or comprehensive life-cycle services: We can meet your demands and deliver precise technologies, from bonding to finishing, for your product.

## THE EXPERTS IN CALENDERING

Let your products benefit from over 60 years of experience and comprehensive project management. With more than 600 nonwovens calenders in operation worldwide and installations in all high-end nonwovens lines, you are ensured top performance from ANDRITZ.

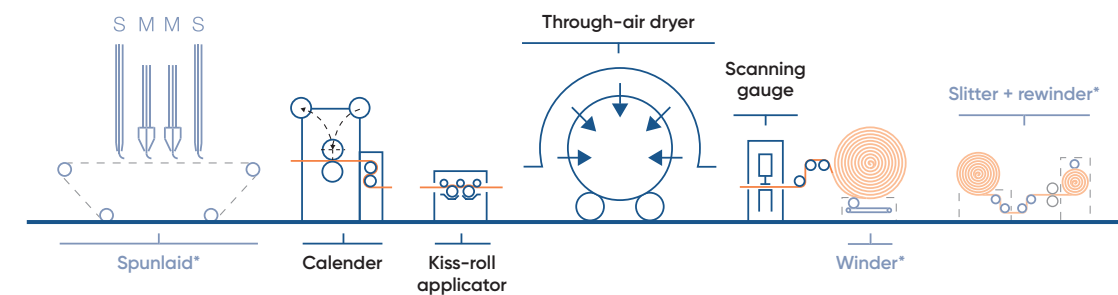
Benefit from reliable, flexible and proven technologies based on more than 750 innovations with worldwide patents along with innovative processes and engineering depth.

Depending on your final product and its parameters, such as strength, softness, or air permeability, our nonwoven calender portfolio ranges from low and medium capacities (aXcess range) to high capacities (eXcelle range), precisely designed to meet your needs.

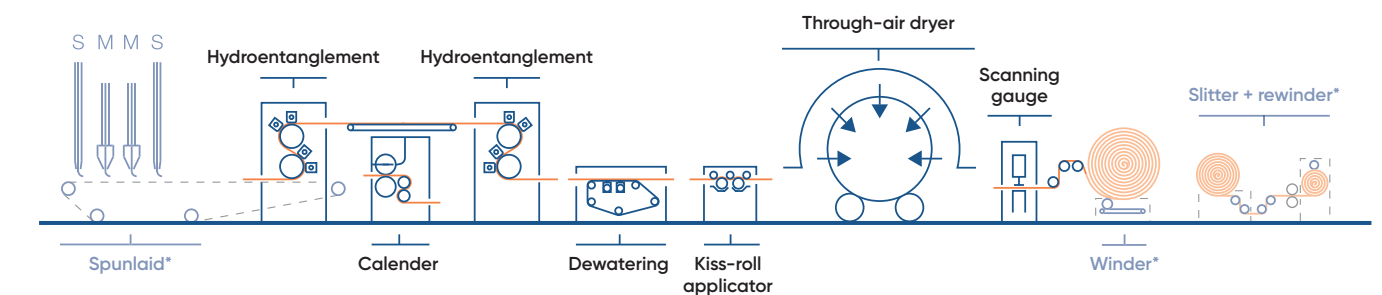
## SPUNJET – A BONDING SOLUTION FOR ENDLESS FILAMENTS

The patented nonwovens process called Spunjet is the in-line hydroentanglement of continuous filaments, creating a new generation of spunlaid nonwovens. Spunjet offers you the best properties ever achieved in 80% of existing and in new nonwovens applications.

By combining two first-class bonding technologies, you can benefit from the typical strength of spunlaid as well as the softness of spunlace. The spunjet process offers you additional softness, bulkiness, drape, and tensile strength while maintaining the isotropic MD / CD ratios in your fabric properties.



ANDRITZ spunlaid finishing line for hygiene and medical end-uses, 8-80 gsm



ANDRITZ spunjet line for the production of new generation spunlaid nonwovens, 20-80 gsm

\* Technology provided by cooperation partners



# Foresee digitally with Metris

Industrial Internet of Things (IoT) Industry 4.0, digitalization – current buzzwords that industries use when seeking to improve their performance and equip themselves for the future of industry.



## ANDRITZ DIGITAL SOLUTIONS

As a technology leader with extensive and long-term experience in supplying industrial measurement, control, and optimization solutions for various industries, ANDRITZ is combining process and equipment expertise with the latest enhancements in the digital era. The result of this powerful combination is Metris: a portfolio of ANDRITZ Digital Solutions.

## METRIS OPP

One of the flagship capabilities of the Metris assortment is its ability to optimize industrial processes with Metris OPP. It has been developed over the past decade within the pulp and paper sector and has recently been introduced to the nonwovens industry. It combines powerful analytical and data mining software with the knowledge of the world's top process experts to deliver a smart service initiative for customers.



## A CONSTANTLY GROWING PORTFOLIO

The depth and effectiveness of the Metris portfolio continues to improve thanks to ongoing R&D, collaboration with key customers and institutions, and venture activities. Portfolio options all rely on the three strategic focus areas of the Metris brand: Industrial IoT



technologies, Smart Service concepts, and Venture activities. The main technological advancements integrated into individual Metris products are derived from big data analytics, smart sensor technologies, and augmented reality solutions. The Metris UX platform providing full support throughout the entire lifecycle of a



plant is the most recent of our IoT developments. With Metris solutions, customers foresee digitally due to the continuously improved portfolio and its performance – and to ANDRITZ providing tailored and fully integrated digital solutions from a single source.

## Benefits

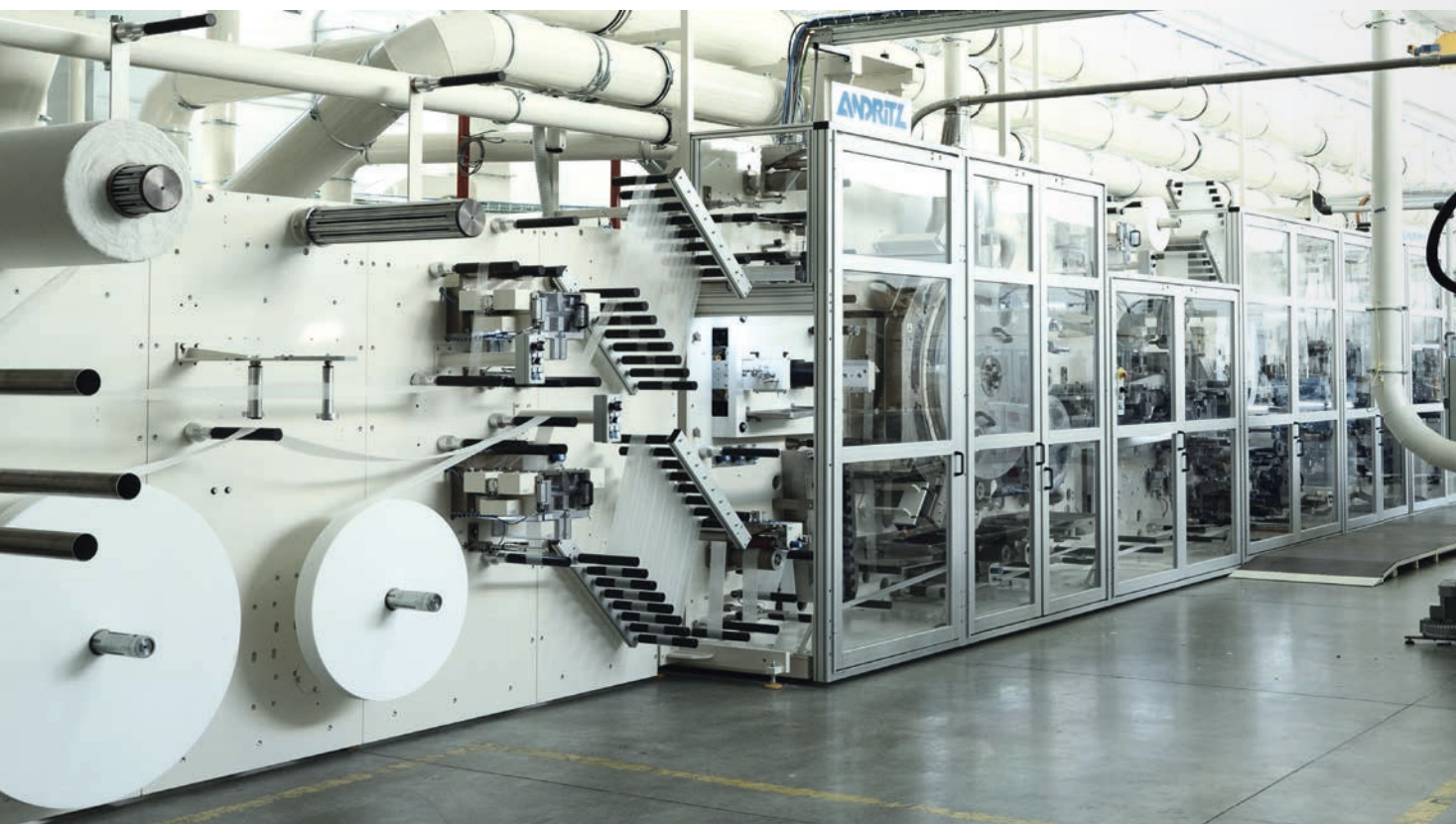
### Metris - ANDRITZ Digital Solutions

- IIoT solutions across business segments
- Combined know-how from ten years' experience with Metris OPP
- Using the latest smart sensor technologies
- Big data analysis with tried-and-tested models for deviation analysis
- Providing information locally with augmented reality
- Extensive solution and process engineering knowledge
- Cyber security solution to safeguard data on the network

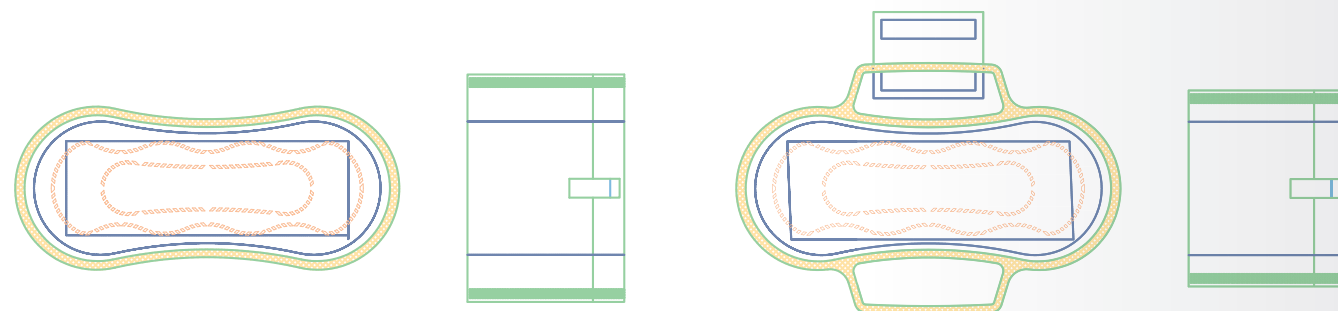


# Sanitary napkin converting machines

**High flexibility in feminine care:** Your production of feminine sanitary products requires high production capacity, high flexibility and excellent efficiency. Our sanitary napkin aXcess and eXcelle platforms are the response to all these demands. Take advantage of our fast and easy size change to increase both your production time and your flexibility.

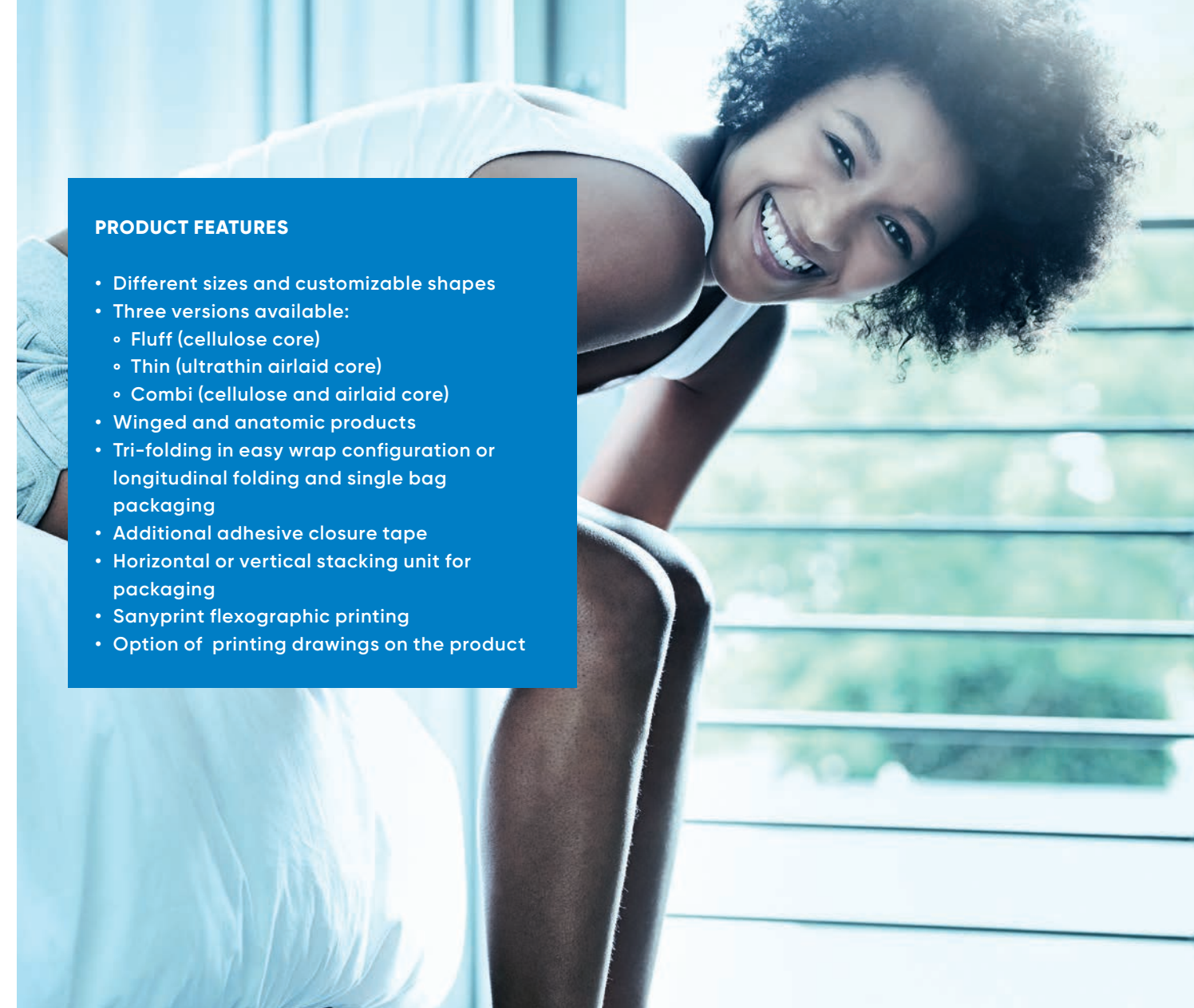


Sanitary napkin line



Anatomic sanitary napkin

Winged sanitary napkin

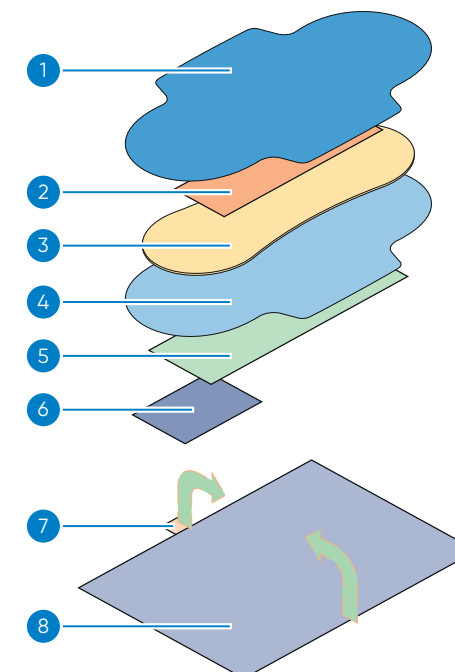


## PRODUCT FEATURES

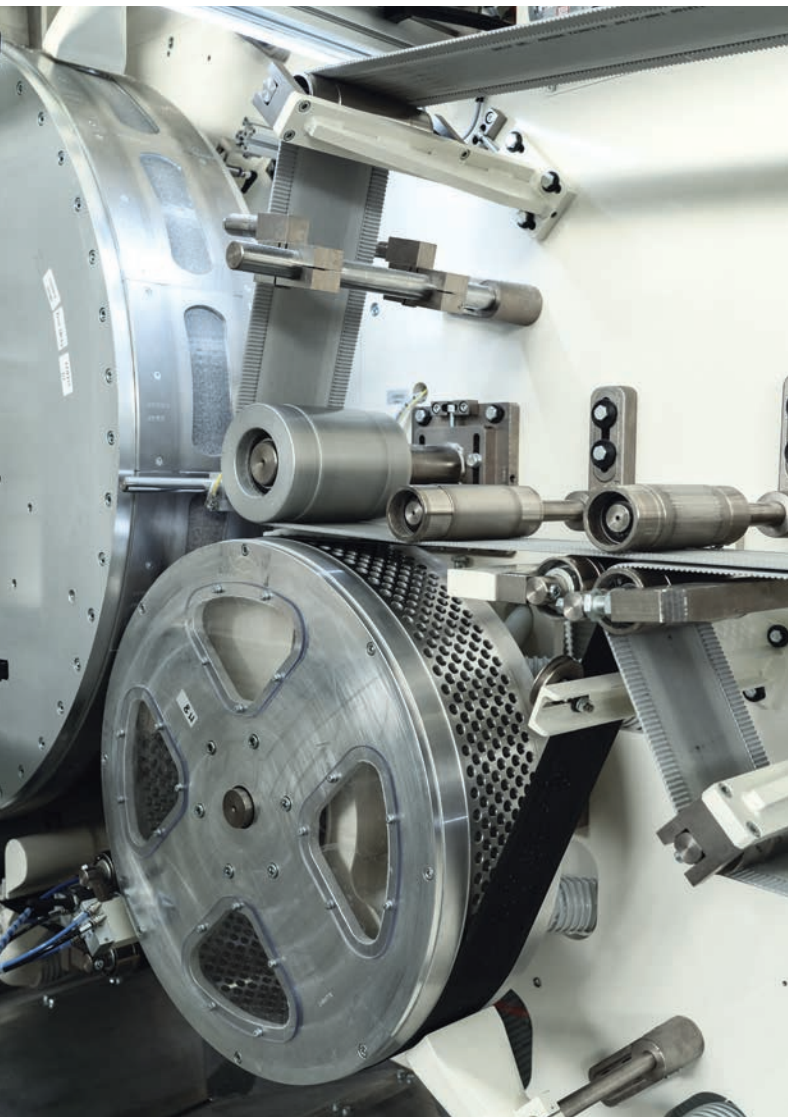
- Different sizes and customizable shapes
- Three versions available:
  - Fluff (cellulose core)
  - Thin (ultrathin airlaid core)
  - Combi (cellulose and airlaid core)
- Winged and anatomic products
- Tri-folding in easy wrap configuration or longitudinal folding and single bag packaging
- Additional adhesive closure tape
- Horizontal or vertical stacking unit for packaging
- Sanyprint flexographic printing
- Option of printing drawings on the product

## PRODUCT COMPOSITION

1. NW topsheet
2. Airlaid
3. Fluff+SAP
4. PE backsheet
5. Wing tape
6. Release paper
7. Preglued tape
8. PE bag



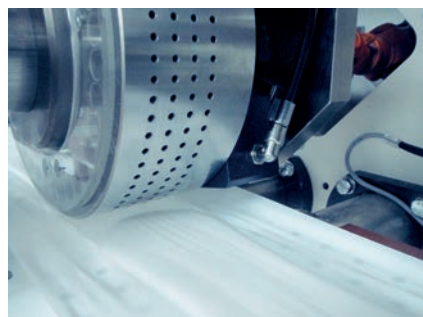
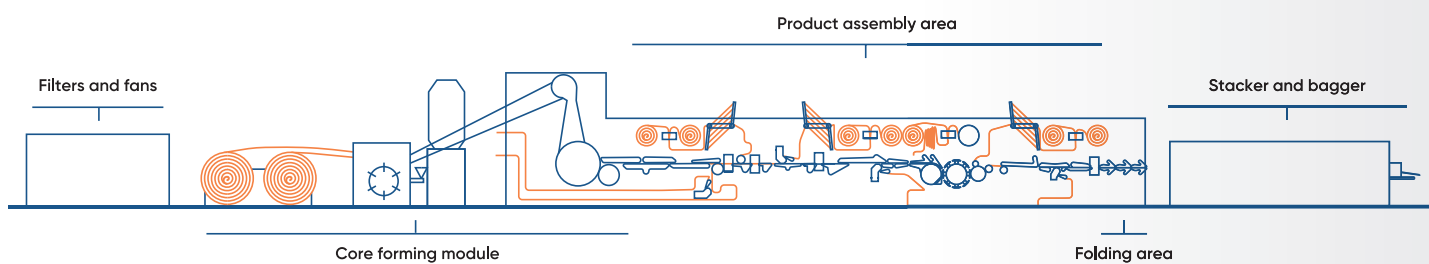




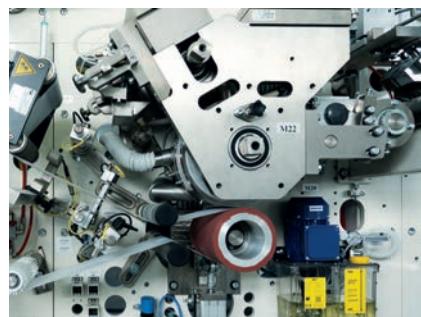
Offline unwinders

### MACHINE SPECIFICATIONS

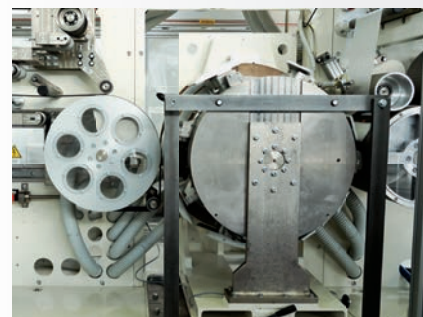
<b>Linear speed</b>	Up to 220 m/min for aXcess Up to 280 m/min for eXcelle
<b>Production speed</b>	Up to 800 pcs/min for aXcess Up to 1,200 pcs/min for eXcelle
<b>Uptime efficiency</b>	85%
<b>Waste</b>	1-3%
<b>Product dimensions</b>	W: 60-200 mm L: 150-340 mm
<b>Electric power supply</b>	220/480 Vac, 50/60 Hz 3 phases + N + PE (24 Vdc auxiliary)
<b>Consumed/installed electric power</b>	220-400 kW
<b>Compressed air supply/consumption</b>	6 bar/1,500 NI/min
<b>Overall dimensions (LxWxH)</b>	26,500 x 8,800 x 4,400 mm
<b>Total weight</b>	70-80 tons
<b>Required crew</b>	2 persons (1 operator + 1 auxiliary)
<b>Safety standard</b>	CE



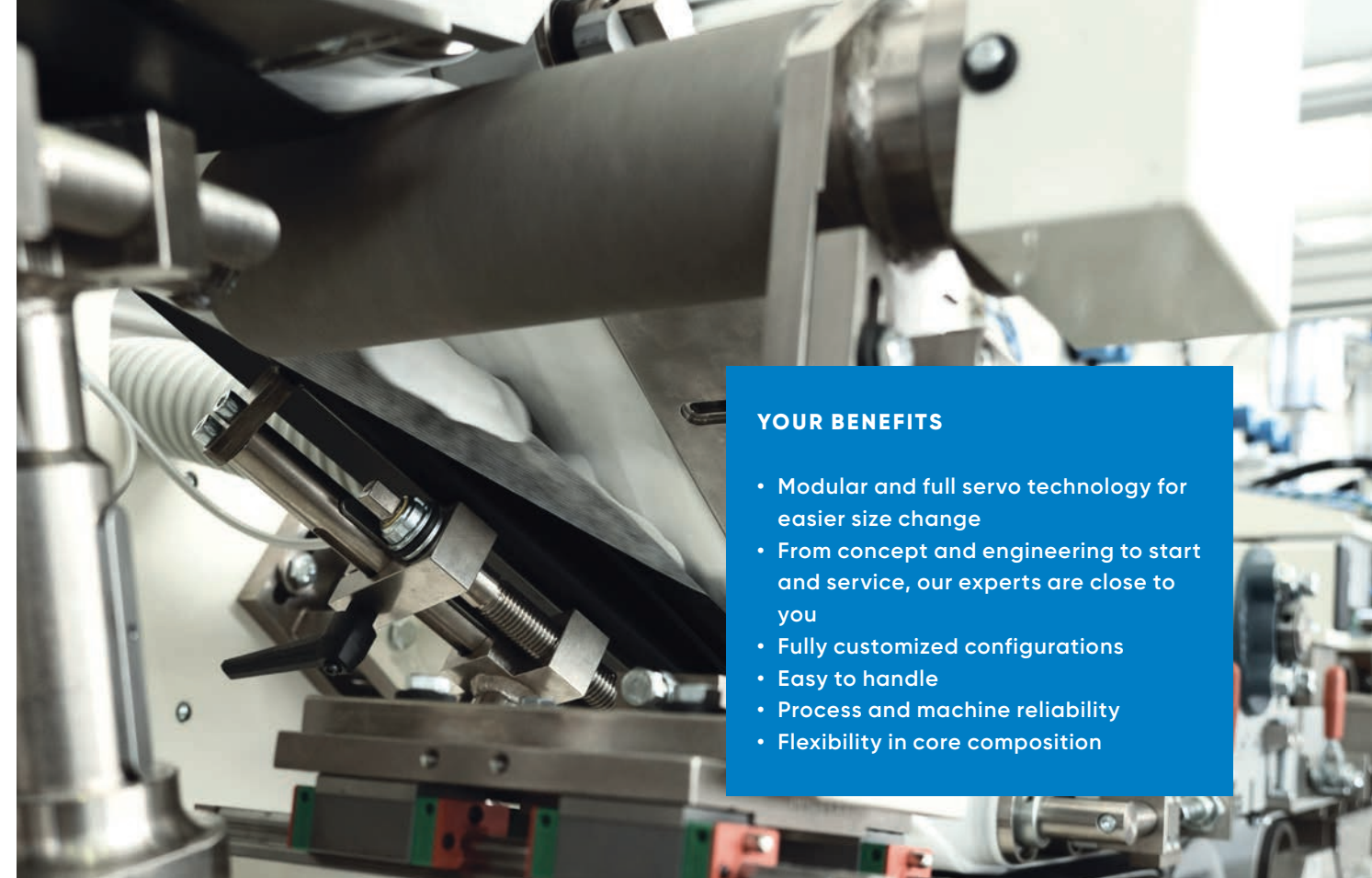
Release paper applicator



Marriage point



Easy-wrap rotator system



### YOUR BENEFITS

- Modular and full servo technology for easier size change
- From concept and engineering to start and service, our experts are close to you
- Fully customized configurations
- Easy to handle
- Process and machine reliability
- Flexibility in core composition

Easy-wrap folding

In sanitary napkin machines, components can be easily combined and configured for the specific product required.

### CORE FORMING MODULE

- Cellulose pulp stand
- Compact disc mill (or hammer mill) with double inlet
- Drum former, 3D or flat
- Core processor
- Take-away drum
- S.A.P. dosing system
- Embossing station
- Contour sealing station

- Easy wrap system with rotator, repitch, folder, sealing/cutting unit and closure tape
- Reject system
- Full servo-motion system
- Hot melt system
- Manuals, drawings and software

- Tri-folder with single wrapping and bypass
- Closure tape application for single bags
- Vertical or horizontal stacker
- Manual exit for stacker
- Automatic or semi-automatic packaging machine
- Cartoning machine
- Soundproof cabin

### OPTIONAL EQUIPMENT

- Second drum former with pad repitch and placer
- Rotary filter with second stage
- Additional size change kits
- Airlaid unwinder with core cutting and transfer unit
- Backsheet unwinder with online lamination and phase control
- Release tape unwinder with online lamination and phase control
- Dimpling station
- Textile edges/split topsheet system (thermosealing, glue or ultrasonic)
- Product turning devices
- Quality system LS with line scan camera
- Metal detector
- Sanyprint kit for flexographic printing
- Glue vision system
- Material handling units

### PRODUCT ASSEMBLY AREA

- Backsheet unwinder
- Nonwovens unwinder
- Acquisition layer unwinder with cut and place unit
- Release tape unwinder with cut and place unit
- Wing tape unwinder with cut and place unit

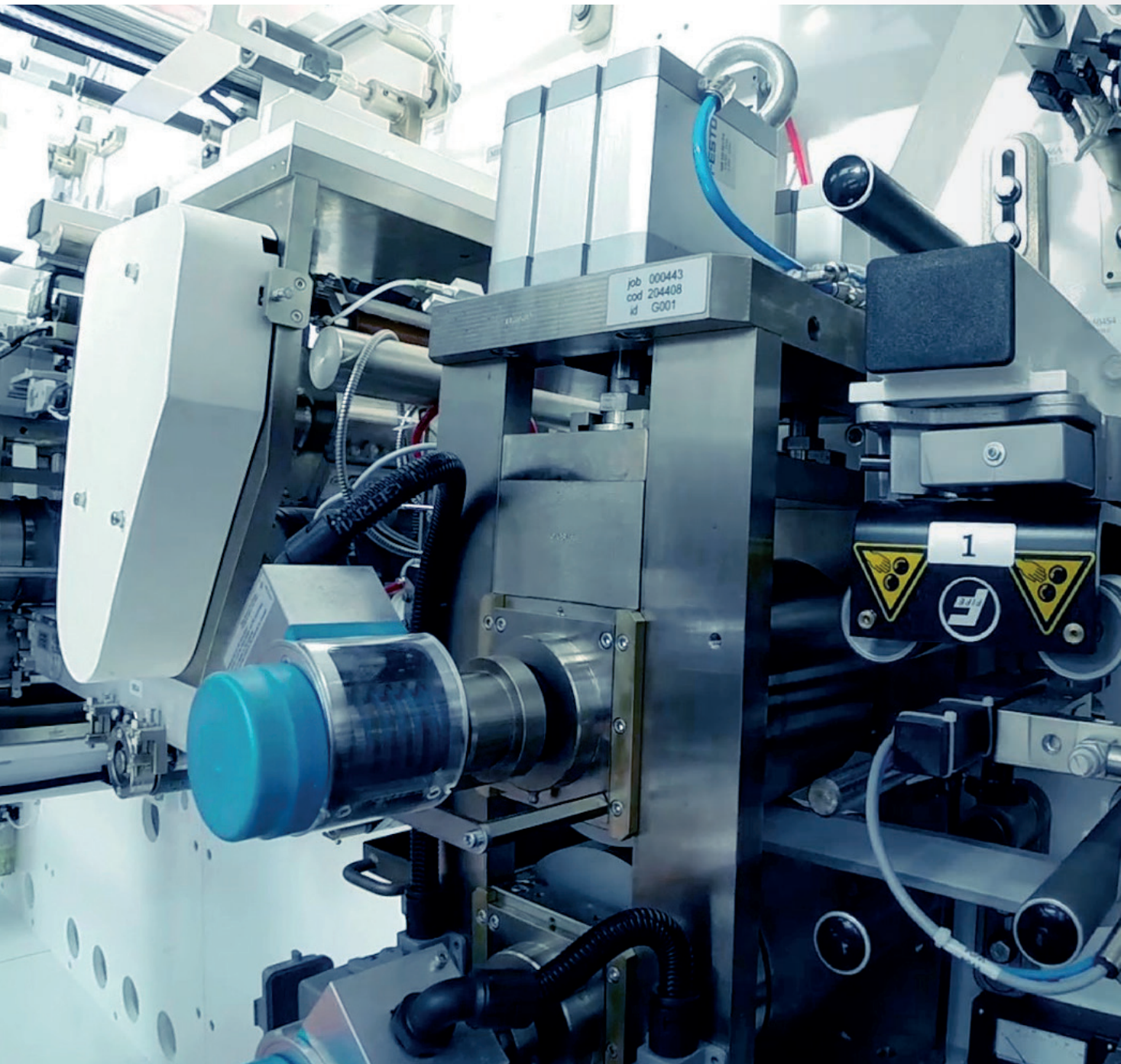
### FOLDING AND FINAL CUTTING AREA

- Contouring rotary die cutting unit with trim suction
- Wing folder

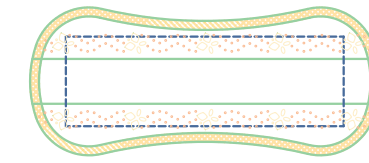


# Panty converting machines

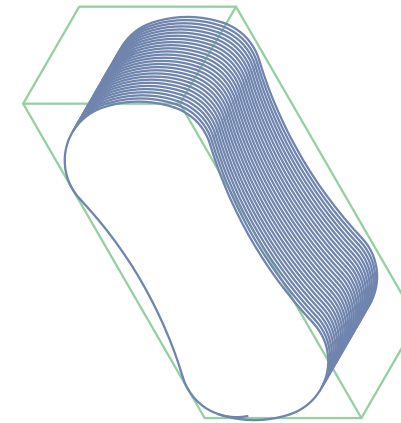
**Optimize your panty shields production:** Combine flexibility, highest uptimes and optimized production with excellent product quality and process stability. This is where our panty eXcelle platforms come in.



Dimpling unit



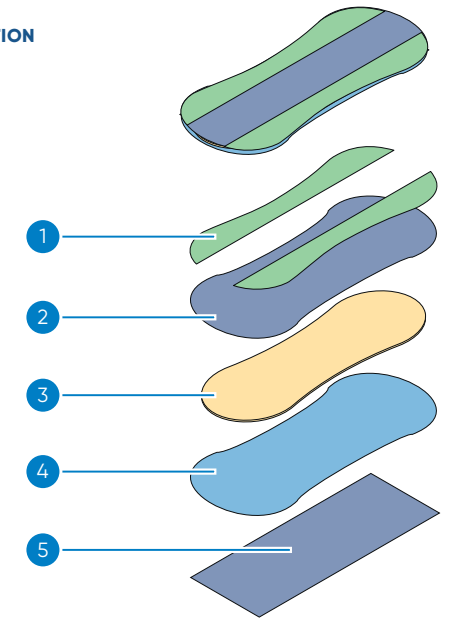
Panty liner



Panty liners in cardboard box

## PRODUCT COMPOSITION

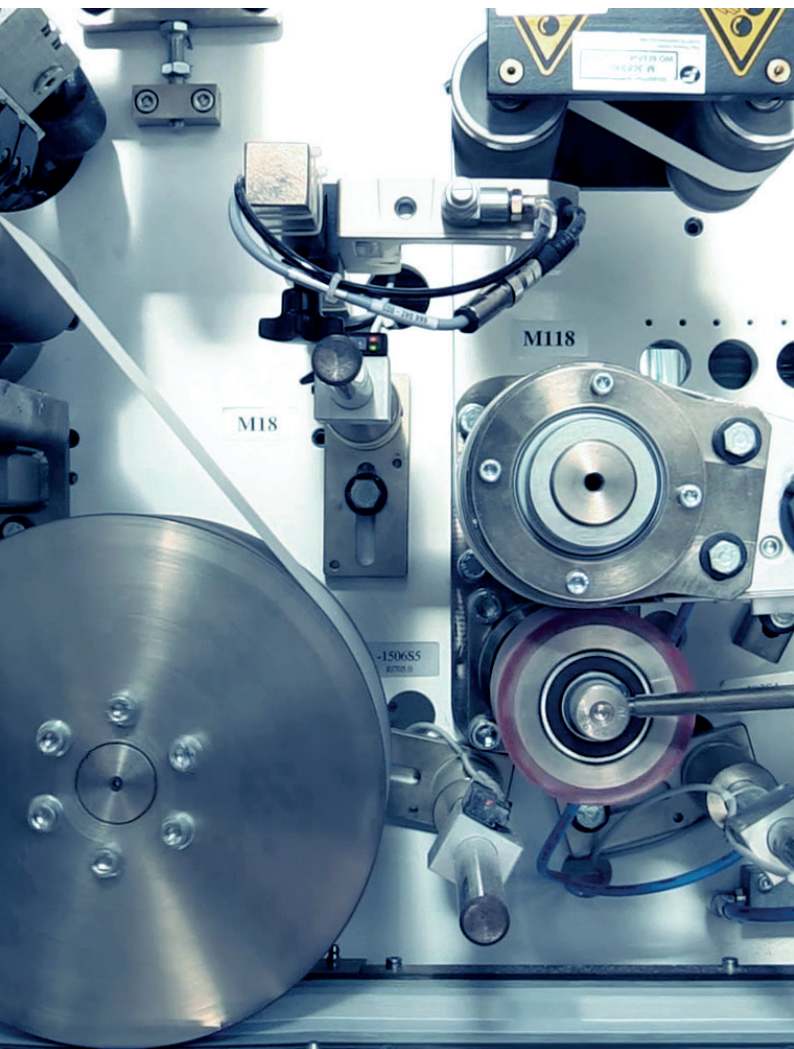
1. NW soft edge
2. NW topsheet
3. Airlaid
4. PE backsheet
5. Release paper



## PRODUCT FEATURES

- Different sizes and customizable shapes
- High-quality panty liners and tangas
- Core made of airlaid or, alternatively, of cellulose fluff
- Silicone paper applicable full-length or in patches
- Trifolded in easy-wrap configuration or, alternatively, longitudinal folding and single bag packaging

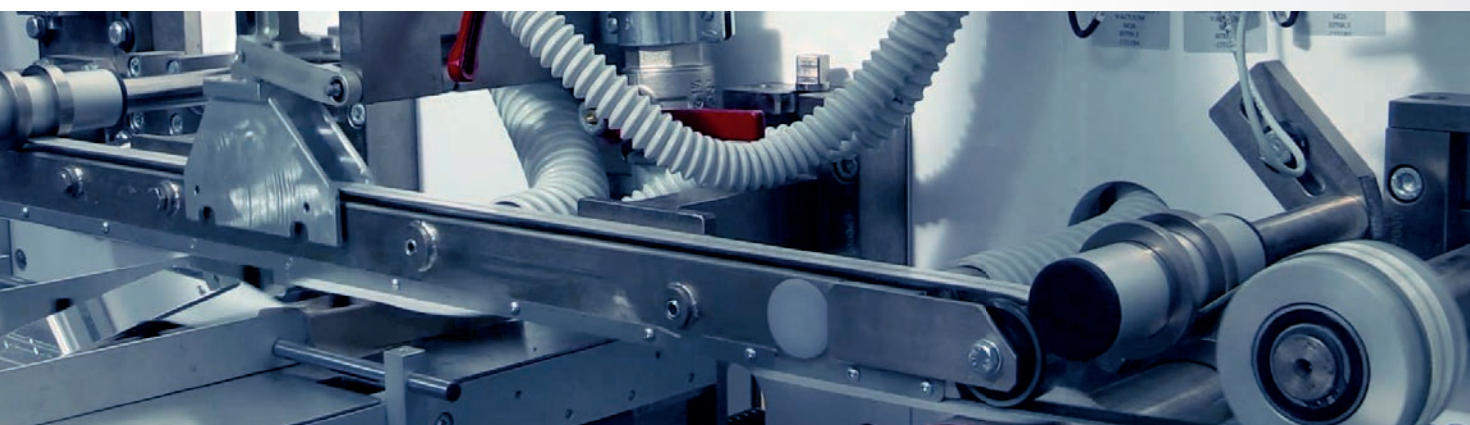
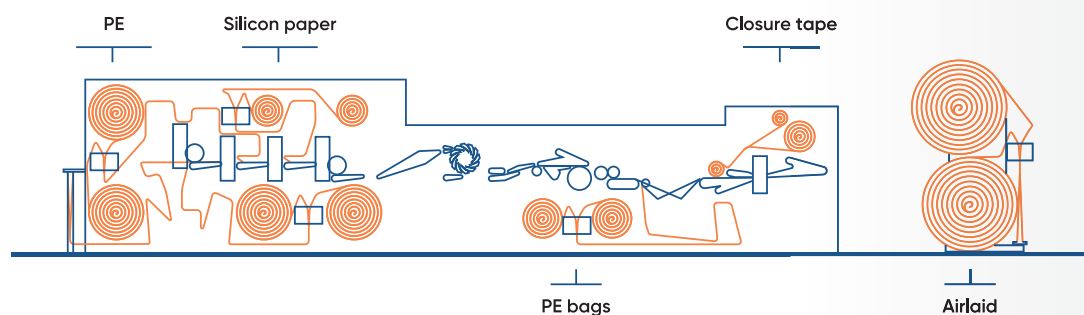




Marriage point (topsheet / backsheet)

### MACHINE SPECIFICATIONS

Linear speed	Up to 280 m/min
Production speed	Up to 1,500 pcs/min
Uptime efficiency	85%
Waste	1-3%
Product dimensions	W: 60-90 mm L: 150-190 mm
Electric power supply	220/480 Vac, 50/60 Hz 3 phases + N + PE (24 Vdc auxiliary)
Consumed/installed electric power	150-240 kW
Compressed air supply/consumption	6 bar/1,000 NI/min
Overall dimensions (LxWxH)	12,000 x 5,000 x 3,600 mm
Total weight	30-40 tons
Required crew	2 persons (1 operator + 1 auxiliary)
Safety standard	CE



Product turning device



Product turning device

### YOUR BENEFITS

- State-of-the-art technology
- From concept and engineering to start-up and service, our experts are close to you
- Fully customized configurations
- Easy to handle
- Process and machine reliability
- Customized configuration
- Compact machine layout

In panty machines, components can be easily combined and configured for the specific product required.

#### PRODUCT ASSEMBLY AREA

- Airlaid unwinder with core cutting and transfer unit
- Dimpling station
- Contour sealing station
- Backsheet unwinder
- Nonwovens unwinder
- Acquisition layer unwinder with cut and place unit
- Release tape unwinder with cut and place unit

#### FOLDING AND FINAL CUTTING AREA

- Contouring rotary die cutting unit with trim suction
- Easy wrap system with rotator, repitch, folder, sealing unit, cutting unit, closure tape application

- Reject system
- Full servo-motion system
- Hot melt system
- Manuals, drawings and software

#### OPTIONAL EQUIPMENT

- Core formation kit for cellulose fluff with compact mill and drum former
- Additional size or shape change kits
- S.A.P. dosing system
- Backsheet unwinder with online lamination and phase control
- Release tape unwinder with online lamination and phase control

- Textile edges/split topsheet system (thermosealing, glue or ultrasonic)
- Tri-folder with single wrapping
- Flat in box
- Vertical or horizontal stacker
- Manual exit for stacker
- Automatic or semi-automatic packaging machine
- Automatic cartoning machine
- Quality system LS with line scan camera
- Metal detector
- Sanyprint kit for flexographic printing
- Glue vision system
- Material handling units





## GET THE MOST OUT OF YOUR INVESTMENT

At ANDRITZ Nonwoven, we know that your business depends on satisfied customers and efficient processes. That's why we support you in every aspect of your nonwoven production. Take advantage of technology that lets you produce consistent quality for decades to come. Profit from the highly efficient use of energy and raw materials that our production provides. You can rely on our responsive service teams, who will protect your investment and optimize your processes. Experience how innovative approaches and digital services give you more control than ever before. With ANDRITZ, the leading supplier for the nonwovens market, you get the most out of your investment.

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